This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (presently amended) A high density output array of multiple yeast strains in the haploid state, wherein each yeast strain in the output array contains at least two deletion mutations ~~genetic alterations~~, and wherein the deletion mutations ~~genetic alterations~~ are different in each yeast strain in the output array, the output array resulting from the mating of at least two input arrays containing yeast strains of different haploid mating types, wherein the mating product of the input arrays is an intermediate array containing diploid yeast strains, with the diploid yeast strains then undergoing sporulation to result in the output array containing haploid yeast strains, wherein the haploid yeast strains in the output array have the same haploid mating type, wherein ~~at least one of~~ the input arrays comprise~~s~~ multiple starting strains of yeast selected from either the *Saccharomyces ~~cerevesiae~~ cerevisiae* or the *Schizosaccharomyces pombe* species, wherein at least one ~~and another~~ of the input arrays comprises starting yeast strains carrying a deletion mutation ~~genetic alteration~~ linked to a dominant drug resistant marker, wherein each starting yeast strain carries at least one deletion mutation ~~genetic alteration~~, with the deletion mutation ~~genetic alteration~~ being different in each starting yeast strain~~., and further wherein the genetic alterations in the starting strains of yeast selected from either the *Saccharomyces cerevesiae* or the *Schizosaccharomyces pombe* species comprise a deletion mutant~~.

2-5. (canceled)

6. (previously presented) The output array of claim 1, wherein the yeast strains are located on plates, with between about 9 and about 6200 yeast colonies on one plate.

7. (previously presented) The output array of claim 1, wherein at least one of the deletion mutations ~~genetic alterations~~ in the yeast strains in the output array is a double mutant, the double mutant involving a mutation of two different endogenous yeast genes.

8. (original) The output array of claim 7, wherein the double mutant carries the deletion of two different non-essential yeast genes.

9. (original) The output array of claim 8, wherein the double mutant is either a synthetic lethal double mutant or a synthetic fitness double mutant.

10. (previously amended) The output array of claim 1, which comprises between about 1,000 and about 25 million strains of yeast.

11-78 (canceled)

79. (previously presented) The output array of claim 1, wherein the starting yeast strains carry selectable markers to permit efficient recovery of haploid spore progeny.

80. (previously presented) The output array of claim 79, wherein the selectable markers are mating type specific promoters which permit selection of particular haploid mating types.

81. (previously presented) The output array of claim 1, wherein the genetic alterations in the starting yeast strains further comprise a genetic tag.

82. (previously presented) The output array of claim 81, wherein the genetic tag is a unique 20mer oligonucleotide sequence.

83. (new) The output array of claim 1, wherein one of the at least two input arrays consists of haploid yeast strains of the MATa mating type and a second of the at least two input arrays consists of the MATα mating type.